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Scientific Work as a Tool of Education in Self-Development and Critical Thinking Skills

ABSTRACT

Scientific work is an important tool for education and self-development. Learning it can enhance critical thinking, analytical, communication, research, collaboration, and creativity and build confidence. Scientific work for education, i.e. improving material understanding, developing critical and analytical thinking skills, and improving scientific communication skills. Scientific work for student self-development, i.e. improving critical and analytical thinking skills, expanding knowledge, developing research skills, and improving communication skills. The relationship between scientific work and students' ability to think critically has been proven by several studies. Critical thinking skills and scientific writing support each other in improving student academic quality. Studying scientific work as a prasarana of education and self-development plays an important role in shaping students into individuals capable of critical, analytical, and creative thinking, necessary for success in the academic and professional world.

Keyword: scientific work, education, self-development, critical thinking

INTRODUCTION

Scientific papers are used as a systematic way to convey the results of thinking and research. Scientific papers in the academic world are not only a graduation requirement but also a tool for disseminating information. Writing scientific papers involves a process of in-depth research, data analysis, and structured presentation of results. Scientific papers can improve academic and professional analytical skills.

Critical thinking skills are one of the important skills that every individual must have, especially for students. Critical thinking not only helps someone understand a concept or problem better, but also allows them to make better decisions in everyday life. One way to improve critical thinking skills is by writing scientific papers.

Writing scientific papers requires the ability to collect, analyze, and evaluate various information systematically and critically. Through this process, a person can hone critical and analytical thinking skills, because researchers must have the ability to consider various factors and choose the right and appropriate approach to solve problems or answer the research questions posed.

Effective education in writing scientific papers can help students organize information well and develop the analytical thinking skills needed to process data. Writing scientific papers can also increase students' desire and interest in conducting research, which in turn can increase the productivity of scientific publications (Hamali, Sambudi, et al, 2023).

However, currently, many students have difficulty writing and low motivation in writing a scientific paper. One of the causes is the lack of motivation in writing. Many students only copy and paste from other websites without developing their own thoughts.

According to Ratna K, Prastikawati, and Setyorini (2012), many students consider writing to be difficult, unmotivated, and unimportant. This lack of motivation also has an impact on the lack of interest in writing, as stated by Sugiarti, Anggraini, and Musaffak (2015). To overcome this problem, higher education institutions must introduce a culture of writing from the beginning and provide adequate training and guidance for students to write scientific papers. This will ensure that students' research findings can be read and utilized by the wider community and contribute to the development of science. It is very important to conduct research on writing scientific papers as a tool to improve students' critical thinking skills. The purpose of this paper is to find out that scientific papers are a means of education in self-development and contain critical thinking and analysis skills, as well as to find out how the process of writing scientific papers can affect students' critical thinking skills.

RESEARCH METHODS

In this study, the author uses a qualitative descriptive method to describe how scientific writing can be an effective tool to improve critical thinking skills. To carry out this study, the author collected data from various sources from libraries such as books, journals, articles, and other sources of information.

RESULT AND DISCUSSION

Scientific Papers as Educational Tools in Self-Development and Critical Thinking Skills

Students and researchers are trained to construct a logical argument, evaluate sources, and critically analyze data from scientific papers. Reading and understanding scientific papers encourages students to think critically about what they see. This helps them solve problems and make rational decisions.

Critical thinking can help students analyze, evaluate, and formulate arguments properly and correctly (Nugraha, 2019). Critical thinking can also help students make the right decisions based on accurate data, and help solve complex problems in a logical and systematic way (Facione, 2011).

Students with good critical thinking skills tend to have better academic achievement, according to Marzuki and Yuliati (2021). This shows that critical thinking is very important for life as a whole, not just for an academic career.

Critical thinking skills can also help students be critical of the information they receive and avoid spreading incorrect information (Setiawan, 2021). Scientific writing requires critical thinking skills. The ability to think critically, according to Paul and Elder (2018), allows writers to draw accurate conclusions and evaluate whether the information they find is correct.

In addition, writers can explore various points of view on a particular topic so that they can make strong and reliable arguments (Zainudin Hasan, 2023). In addition, in the era of globalization and increasingly fierce competition, critical

thinking skills are also one of the skills sought by companies or the world of work (Facione, 2011).

This shows that critical thinking skills are not only important for academic life, but also important for preparing students for their future careers, one effective way to improve the quality of education is to study scientific works.

Studying scientific papers gives students the opportunity to improve their understanding of the subject, improve their ability to think critically and analytically, and improve their ability to communicate scientifically well.

Scientific papers are writings that are written using scientific methods and are based on research or analysis results. The function of scientific papers in higher education is very important because scientific papers can improve the quality of education, enrich knowledge, and provide benefits to society. In addition, scientific papers can also be used as an indicator in assessing the quality of an educational institution (Zulkifli, 2022).

Writing scientific papers requires students to think critically and analytically, evaluate sources, and construct logical arguments. These skills are very useful in various aspects of life. Conducting research and writing scientific papers encourage students to study a topic in depth and thoroughly. This can help them understand concepts and theories better, broaden their horizons and knowledge, and improve their understanding of the world. Solving problems and making decisions is very helpful with research process skills.

Higher education aims to produce graduates who have the ability and skills to conduct research and produce quality scientific papers. Through writing scientific papers, students can develop analytical and synthesis skills, as well as critical and creative thinking skills. In addition, writing scientific papers can also improve students' ability to write and present ideas clearly and systematically (Fauzi, 2022).

Students face many difficulties when writing scientific papers, one of the main challenges is finding the right topic that matches the scientific field being studied.

Students must have the ability to find relevant problems and have the ability to produce quality scientific papers.

Students face challenges in conducting accurate and valid data analysis. This requires expertise in using appropriate data analysis methods and techniques, as well as the ability to interpret the results of data analysis correctly and objectively. Another difficulty is conveying concepts and ideas systematically and clearly in scientific work. Students must pay attention to the ideas and concepts presented appropriately and consistently, as well as the correct grammar and writing structure.

A recent study by Khalique, Rahman, and Rahman (2021) found that students often have difficulty finding relevant and reliable sources of information to support their research. The study also found that students who are more proficient in using information technology are more likely to find the right sources of information.

In addition, a study by Kusumawati, Hidayat, and Susilowati (2020) showed that students need to acquire skills and abilities in managing information to write quality scientific papers. This study suggests that the use of information technology can help students collect, store, and manage information sources.

Scientific papers are a useful tool for student self-development. By writing scientific papers, students can improve their skills in critical thinking, analysis, communication, research, collaboration, and creativity, as well as increase their self-confidence for future success.

Therefore, it is important for colleges and universities to provide the necessary training and resources to help students develop their skills in finding relevant sources of information and utilizing information technology in writing scientific papers. This can also help ensure that students' scientific papers are of good quality and can be relied on as useful sources of information in the future.

The process of writing scientific papers affects students' critical thinking skills

One of the studies that has been conducted to see the relationship between scientific writing and students' critical thinking skills was carried out by Suryani and Widhiarsono (2022) with the title "Correlation Analysis between Critical Thinking Skills and the Quality of Students' Scientific Work". The results of the study showed that better critical thinking skills are related to the quality of scientific work produced.

Research by Fitriani and Pratiwi (2021) in their research results showed a positive correlation between critical thinking skills and the quality of students' scientific work, the higher a person's critical thinking skills, the higher the quality of the scientific work produced.

Research by Suryani and Widhiarsono (2022) and Fitriani and Pratiwi (2021) supports a positive correlation between critical thinking skills and the quality of students' scientific work. These findings show that improving critical thinking skills through scientific writing can produce higher quality work.

Critical thinking skills and scientific writing support each other in improving students' academic quality. Collecting important data and information from various sources is part of the scientific writing process. Students must be able to identify, collect, and analyze information systematically.

Critical thinking skills are essential to evaluate the credibility, accuracy, and relevance of sources used when gathering and analyzing information. Students learn to question and assess the truth of information rather than accepting it instantly. Universities need to pay more attention to education and training in scientific writing as an effort to improve critical thinking skills and, ultimately, the quality of students' academic results. Studying scientific works as a means of education and self-development plays an important role in shaping students into individuals who are able to think critically, analytically, and creatively, which is necessary for success in the academic and professional world.

CONCLUSION

Scientific work is one of the effective ways to improve education and self-development. By studying scientific work, it can improve the ability to think critically, analytically, communicate, research, collaborate, and be creative. The results of this study show a positive correlation between critical thinking skills and the process of writing scientific work. These results show an increase in students' critical thinking and analytical skills through writing scientific work that is able to produce higher quality, visionary, and innovative scientific work so that it is able to solve problems that arise in the future.

REFERENCES

Alam, M. T. (2015). Fostering Academic Writing Skills among Undergraduate Students. Journal of Education and Practice, 6(22), 81-85.

Facione, P. A. (2011). Critical thinking: What it is and why it counts. Insight assessment.

Farid, R. N., & Hasan, Z. (2022). Penerapan Sanksi Pidana Terhadap Tindak Pidana Penggelapan Dalam Jabatan Terhadap Karyawan Toko Erafone Megastore Cabang Mall Kartini Bandar Lampung (Studi Putusan Nomor 569/Pid. B/2021/Pn Tjk). Innovative: Journal Of Social Science Research, 2(1), 319-328.

Fauzi, A. (2022). Fungsi Karya Ilmiah dalam Meningkatkan Kualitas Pendidikan Tinggi. Jurnal Ilmu Pendidikan Indonesia, 6(1), 21-30.

Fitriani, A., & Pratiwi, S. S. (2021). Hubungan Kemampuan Berpikir Kritis dengan Kualitas Karya Ilmiah Mahasiswa. Jurnal Kedokteran dan Kesehatan, 8(1), 15-23. https://doi.org/10.15562/jk.v8i1.246

Halpern, D. F. (2014). Thought and knowledge: An introduction to critical thinking.

Hamali, S., Riswanto, A., Zafar, T. S., Handoko, Y., Sarjana, I. W. M., Saputra, D., ... & Sarjono, H. (2023). METODOLOGI PENELITIAN MANAJEMEN: Pedoman Praktis Untuk Penelitian & Penulisan Karya Ilmiah Ilmu Manajemen. PT. Sonpedia Publishing Indonesia.

Hartono, B., Hasan, Z., & Putri, A. N. K. P. (2022). Implementasi Sanksi Pemberhentian Tidak Dengan Hormat Anggota Kepolisian Yang Melakukan Pencurian Dengan Kekerasan (Studi Putusan Kode Etik Nomor: Put. Kkep/148/X/2021 Kkep). Sol Justicia, 5(2), 219-227.

Khalique, M., Rahman, A., & Rahman, M. M. (2021). Exploring the challenges of finding reliable information sources: An investigation of university students' information literacy skills. Education and Information Technologies, 26(2), 2437-2453. https://doi.org/10.1007/s10639-020-10361-3

Kusumawati, I., Hidayat, R., & Susilowati, I. H. (2020). Developing students' information literacy skills in writing scientific papers using digital technology. Journal of Physics: Conference Series, 1462(1), 012016. https://doi.org/10.1088/1742-6596/1462/1/012016

Lestari, S. C., & Hasan, Z. (2022). Pertimbangan Hukum Diterimanya Pengajuan Praperadilan Pelaku Tindak Pidana Korupsi Proyek Jalan di Kabupaten Lampung Timur. Muhammadiyah Law Review, 6(1), 28-37.

Marzuki, E., & Yuliati, N. L. P. (2021). The Effect of Critical Thinking Ability and Learning Motivation on Academic Achievement. Journal of Physics: Conference Series, 1867(1), 012065.

MF. Arrozi Adhikara, Sri Handayani, Sapto Jumono, Darmansyah. (2014). Pelatihan Menulis Artikel Ilmiah bagi Dosen dan Mahasiswa Pascasarjana Universitas Pendidikan Indonesia. Prosiding Seminar Nasional PKM dan CSR Ke-3, 332-341.

Nugraha, A. (2019). Pengembangan Kemampuan Berpikir Kritis Siswa Melalui Pembelajaran Berbasis Masalah. Journal of Innovative Science Education, 8(2), 120-129.

Paul, R., & Elder, L. (2018). Critical thinking: The nature of critical and creative thought. Journal of Developmental Education, 38(2), 34-35.

Psychology Press.

Ratna K, Prastikawati, & Setyorini. (2012). Analisis kesulitan mahasiswa dalam menulis karya tulis ilmiah di fakultas ekonomi dan bisnis universitas Brawijaya. Jurnal Pendidikan Ekonomi, 8(1), 19-30.

Setiawan, A. (2021). Strategi Pendidikan Karakter di Era Digital. KEMENDIKBUD. Sugiarti, T., Anggraini, W. D., & Musaffak, R. (2015). Minat mahasiswa terhadap menulis karya ilmiah di Universitas Muhammadiyah Surakarta. Jurnal Pendidikan Vokasi, 5(2), 139-150

Suryani, L., & Widhiarso, W. (2022). Analisis Korelasi antara Kemampuan Berpikir Kritis dan Kualitas Karya Ilmiah Mahasiswa. Jurnal Psikologi, 10(1), 78-88. https://doi.org/10.14710/jp.10.1.78-88

Tarigan, H. G. (1986). Menulis sebagai suatu keterampilan berbahasa. Bandung: Angkasa.

Zainudin Hasan. (2023). Penegakan Hukum Terhadap Pelaku Tifndak Pidana Membujuk Anak Di Bawah Umur Untuk Melakukan Perbuatan Cabul Terus Menerus. JURNAL RECTUM, Vol. 5, No. 1, (2023) Januari : 890 - 900

Zulkifli, Z. (2022). Proses Penulisan Karya Ilmiah pada Mahasiswa di Era Digital. Jurnal Ilmiah Teknologi Pendidikan, 7(1), 1-10.